ITEMS OF INTEREST.

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Thots from the Profession.

THE DENTIST.

EDITORIAL IN THE "CHRISTIAN ADVOCATE."

Men are now living who, in their youth, never heard of a dentist, and when a pair of pincers would not suffice to extract their aching teeth, went to the country doctor or to the barber. He put on a turn-key, and dragged the victim around the room, or held his head between his knees, while he tore the incisor or the molar from the jaw. In those days, the teeth were more generally sound, on account of simpler habits of the people, and their greater physical strength relatively to the whole mass of the population. But the open mouths of persons over forty years of age presented a spectacle not easily described, and only occasionally paralleled now; while those who illustrated the declaration of Ecclesiastes, that "the grinders cease because they are few," had no means of supplying their place, and seemed prematurely old. Toothache was the common lot of mortals, and fulfilled the statement of Lord Brougham, who in old age, when speaking in the House of Lords, having trouble with his teeth, paused to adjust an ill-fitting set, saying as he did so, "One's teeth are trouble from his birth to his death."

DENTISTRY KNOWN TO THE EGYPTIANS.

Though dentistry as a distinct profession seems to be of very recent origin, I am prepared to prove that the Egyptians, who were far in advance of most other nations, had dentists. By reference to *Euterpe*, the second book of Herodotus, and the 84th paragraph, the following will be found: "The art of medicine is thus divided among them: each physician applies himself to one disease only, and not more. All places abound in physicians; some physicians are for the eyes,

others for the head, others for the teeth, others for the parts about the abdomen, and others for internal disorders." A physician exclusively for the teeth was nothing more or less than a dentist.

There are now about 13,000 dentists in the United States alone, and dentistry is here carried to such perfection that American dentists and American dental work are in great demand in the capitals of Europe. Some American dentists have achieved world-wide fame in Paris, and are living there in great wealth.

I have been at great pains to find what a young man who chooses this profession most needs; and what is here presented has behind it the authority of some of the most eminent members of the profession in the country.

CHARACTERISTICS OF THIS PROFESSION.

The early dentists were taunted as "tooth-doctors," and classed with corn-doctors and other specialists who deal with what are considered the less important, but are often most troublesome, parts of the body. In some sections of the country dentists now occupy as high a place as physicians and surgeons. Their incomes are as large and their professional attainments as great, and their standing as professional men thoroughly established. The profession is a happy combination of theory and practice, of physical and mental activity, of mechanical skill and scientific study. As many critical questions arise in the practice of a dentist of large business as in that of an ordinary physician, though, of course, the scope of the latter is much wider. Dentists who are competent often have to deal with diseases which would prove fatal in the hands of an ordinary practitioner—necrosis of the bones of the face and skull, blood-poisoning, and many other things to which certain diseased conditions of the teeth and jaw give rise. The influence of a permanently diseased and aching condition of the teeth upon the nervous system is very great, and, through mastication, good teeth may guarantee good health where bad teeth would certainly cause maladies of the digestive organs.

INCOME OF THE DENTIST.

The average income that a good dentist can make in any place, meaning by this a person who has a fair business, for a country town, is from $1,000 to $1,500. A dentist located in a country town or a populous center, who has such fine reputation as to draw his patronage from a large area, may rise above this to $2,000, or even $3,000 per annum.

In the cities, fortunate men of exceptional qualifications, the best social connections, and the finest locations, have incomes running $6,000 and $8,000 to $20,000 or $30,000, while good dentists in large

cities are as well paid as physicians, who are considered to be prosperous and destined to rise to the front rank. I am not prepared to say that the best dentists receive as high returns as the best physicians. The element of consultation comes in, for which fabulous prices may be paid. Visits, protracted vigils, and exclusive devotion to one family in a critical emergency, also distinguish the physician from the dentist, and special operations, for which only one or a few have a high reputation, and which involve great risk of life, enable the eminent surgeon to make any demands which patients, whatever their financial standing, can reasonably be expected to pay. There is no question, however, that dentistry is a remunerative profession, and has many advantages peculiar to itself. The dentist is not required to expose himself, or to go from house to house. His patrons come to him; he does not go to them.

STANDARD OF PROFICIENCY ELEVATED.

The standard of proficiency in this profession has been elevated, and the amount of time necessary to master it gradually increased, and is still increasing. Men of better education are entering its ranks, and preliminary examinations as to general education are required before allowing the student to commence the practice of dentistry. Laws have been passed in many of the States requiring that dentists be graduates of dental colleges before they can commence to practice. In order to be eligible to membership in the best dental societies, it is necessary to be a graduate of a dental college. Great changes in these particulars have taken place in the last ten or fifteen years. From present indications, the time will come when the degree of Doctor of Dental Surgery will mean almost as much as that of Medicine.

Much more attention is now paid to operative dentistry—filling and preserving the teeth—than to the manufacture and fitting of artificial teeth. In this a great change has taken place. Twenty-five years ago, as soon as possible the dentist got the teeth out of the patient's mouth and a contract for a new set, expecting to make his profits upon the manufacture of teeth and the work done in extracting decayed teeth and roots, and fitting temporary and permanent sets. Then but comparatively little was known about preserving teeth, and filling, except by skilful men, who always existed, was done hastily and painfully. Now it is found that teeth can be preserved almost for a lifetime after they have seriously decayed, and men can be found who have a comparatively good set of teeth for the practical purposes of both mastication and articulation who, thirty years ago, in the then existing state of dentistry, would have had every tooth they now have extracted, and an artificial set put in.

GOOD WORK THE CONDITION OF SUCCESS.

In order to succeed permanently a dentist must thoroughly understand his profession, and have the ability to do good work. As an eminent dentist observed to the writer, a dentist may be a Chesterfield in manners, but if his work does not stand the test of time he will not permanently succeed. Here the dentist has not the advantage which the physician possesses, for the physician can refer to occult constitutional conditions, and speak of the state of the blood, the heart, and the liver, and keep on experimenting for an indefinite period of time before the patient becomes utterly discouraged. The dentist's work is, in most cases, on the surface. If the fillings do not stay, if the teeth continue to ache, if the artificial teeth fall out, rattle, or slide up and down, giving the unfortunate wearer the appearance of a person about to have an epileptic fit as he shakes his head to prevent himself from suddenly becoming toothless in the presence of his friends or the public, he will not long patronize the same dentist.

MECHANICAL SKILL NECESSARY TO DENTISTS.

A physician may be very skilful without any mechanical skill, though a surgeon cannot be; but a dentist must have the element which the phrenologists, whose terms are better than their theories, call "constructiveness." Every dentist should have these six things: Good ability, good manners, a pleasant address, cleanliness, tact, and a good personal appearance. He is brought into close contact with his patrons, many of whom are ladies and children. He must touch them. He must encourage them, compose them when agitated, and help them to bear protracted or, what is worse, sudden pain.

VALUE OF A COURSE IN A MEDICAL COLLEGE.

It is better to take a course in the medical college in addition to pursuing dental studies. Some dental colleges are now connected with medical schools, as the University of Pennsylvania. Though the instruction in anatomy is very good in the best dental schools, and all that is really necessary is given, there are many reasons why it would be better that dentists should be graduates in medicine. The use of anæsthetics is occasionally attended with serious results. To decide when to administer them requires a knowledge of the general condition of the patient, to perceive in an instant whether any evil consequences are likely to occur, to use efficient antidotes—all require, or may in any case require, much medical knowledge. Besides, where anæsthetics are not administered, fatal bleedings have been known to occur. Deaths from heart disease have happened in the dentist's chair, or swoonings succeeding each other until a condition of profound exhaustion and nervous prostration ensued.

ANÆSTHETICS NOT TO BE USED ON SLIGHT OCCASION.

It is proper to say that the best dentists are now discouraging the use of anæsthetics, except in extreme cases. The London *Lancet* has for a number of years been publishing accounts of fatal cases of the use of chloroform, and although ether and nitrous oxide are much less dangerous, the evil effects of their use, whatever *interested* persons may say to the contrary, are sufficiently serious to make it unwise to use them upon slight occasions. It is considered also by thoughtful persons to have a weakening effect upon the moral tone to train youth to seek unconsciousness in order to avoid a slight pain.

TEMPTATIONS OF THE DENTIST.

The temptations of this profession are analogous to those to which the physician is exposed. The dentist does his work in his office, and operates upon both the weak and the wicked, as well as upon the strong and the pure. If he be either weak or wicked, or without self-control, his reputation may be imperiled by an impropriety, or his character ruined by a crime. Such instances, and that in the highest circles of society, have occurred. The adventuress has also been known to take advantage of such situations to ply her trade as a black-mailer.

A CAUTION AND A CONGRATULATION.

The caution is this: As the work of the dentist is an indoor work, and he is obliged to stand in such relations to those upon whom he operates as to breathe an impure atmosphere, if he wishes to preserve his health he must systematically spend some time in the open air every day. As his work is very confining, and of such a nature as to tax his nervous system, he must take vacations of a day or so in each month, and of a week or more in each year. Otherwise he will become feeble and nerveless, and a nerveless dentist can neither operate well nor exert the peculiar steadying influence upon his subjects which is almost as important as skill in his art.

The congratulation is this: That you enter upon the profession at a time when it is universally respected, and when men are ready to pay for professional work in proportion to skill, and not in proportion to the time or brute force it may require. An old surgeon told me a story nearly thirty years ago which is in point: A laborer called to have a tooth extracted. The dentist put on his instruments, and took it out in a moment of time. "What is to pay?" said the man. "Fifty cents," said the dentist. He replied, "Why, that is altogether too much. It didn't hurt me hardly any, and it only took three seconds." "Can't help it," said the dentist; "fifty cents is the price." Five or six months afterward the man, who went away grumbling, came

back to have another extracted. The dentist remembered him; put on his instruments, and let them slip off, put them on again and pulled the poor fellow all around the room. At the end of ten or twelve minutes of torture did what he might have done in the beginning—deftly extracted the tooth, with only a moment of pain. "What is to pay?" spluttered the man as the blood run from his mouth. "Fifty cents," said the dentist. "We have but one price here for pulling teeth." "Cheap enough," said he; "it 'most killed me, doctor, and you had to work hard to earn your money." The time is past when dentists have to encounter such ignorance.

Bespeaking your tenderest consideration for those who have to submit to your treatment, and urging you to qualify yourself to take high rank in your chosen profession, I express the hope that these hints may be found useful.

THE CLIMATES OF EUROPE AND AMERICA.

BY FELIX L. OSWALD.

The sufferings of the so-called northern countries of Europe are only playful allusions to the experiences of our own Northern States. When Fahrenheit constructed his thermometer he fixed his *zero* at the point which he believed to be the lower extreme of any possible temperature outside of a chemical refrigerator. In Antwerp 20° above zero depopulates the streets; 10° mobilizes the Berlin relief-committees; and zero itself would make the Copenhageners stare. But in Duluth, Minnesota, 45° *below* zero is nothing unusual; and three years ago a series of "cold waves" acquainted the New Yorkers with —8°, —10°, and —14°. The longevity of the Scotch Highlanders would be incompatible with such possibilities. Heinrich Heine has a story of a Greenlander who came to St. Petersburg to "enjoy the benefit of the mild climate," and persons who have found that barbarous frosts do not agree with their constitution would commit a similar mistake by migrating from Northern to Southern New York. For such persons Southern Pennsylvania would be about the Ultima Thule of a really endurable climate. That would be the latitude of southernmost Italy, but its weather-conditions would be only those of Northern Austria. Spring opens in Prague about as early as in Philadelphia; Vienna and Paris correspond to Washington, Geneva to Richmond, Turin to Nashville, Rome to Montgomery, Athens to Austin or Mobile. The boasted climate of Berne, now the Medina of European consumptives, might find its equivalent in Asheville, North Carolina, in that marvellous high yet dry and mild upland valley enclosed between the Blue Ridge and the Western Alleghanies, like Cœle-Syria between the parallel ranges of the Libanus. For Naples we have no analogue on

the Atlantic slope; our east coast is cursed with swamps; but in California, with its Italian winters and its cloudless summers, the sublime scenery of Santa Barbara, Bodega Bay, and Point Carmel invites invalids to see and live.—*Lippincott's Magazine.*

DISEASE GERMS.

We hear much concerning the germ-theory of disease, and the minute organisms which are supposed to produce in the human organization some of the most formidable ailments with which we are acquainted. Among the diseases which are supposed to be caused by the entrance into the system of living germs are fevers (intermittent, relapsing, typhus, typhoid, and yellow), also cholera, diphtheria, and tuberculosis, or consumption. This enumeration presents a frightful array of some of the worst disease-enemies of the human race; and if there is good evidence that there are in nature minute organisms which originate them, no inquiry can be more important and interesting than that regarding their nature and origin.

These germs have been attentively studied, and among medical men, microscopists and naturalists are quite well understood; but it is exceedingly difficult to convey to the popular reader clear conceptions of their physical forms and the conditions under which they exist and are propagated. They are so exceedingly minute, that the highest powers of the microscope are required to bring them within the reach of vision. Bacteria and other forms are easily produced in clear liquids, as water, by placing in the same a small quantity of organic matter, as infusion of hay, and exposing it to the air. In a few days the liquid will become turbid or cloudy; or perhaps a film will form upon the surface, or a deposit upon the walls of the vessel which contains it. If we examine this turbid matter microscopically we shall find that it is composed of minute organized bodies, some rod-like, others globular, others spiral. They are capable of self-propagation and endowed with motion, at least so it is affirmed by the best observers. Not only in liquids, but in the dust which floats in the air, are these forms found, and also in certain soils, and in all places where uncleanliness exists. We know they exist in the blood, and, in some instances, in the tissues of the human body when disease of certain forms prevails; for they have been detected by the aid of the microscope in vast numbers. The connection between these organisms and disease may be regarded as well established; and hence arises the inquiry, How can they find their way into the systems of healthy persons to produce disease?

There are two prominent inlets into the body, which are like open doors, with no sentinels to guard them. The air is constantly passing

into the lungs, and water and foods are entering the stomach at frequent intervals, during every twenty-four hours. It is probable that through the respiratory organs they enter most frequently; but in the water we drink, and in certain forms and conditions of foods, we find favoring conditions for their production and transmission. It is therefore of the highest consequence that we should study to avoid bad air under all circumstances, and polluted waters of wells and cisterns, which are fruitful sources of disease germs. With proper caution we can avoid the enemy which lurks around us, and save ourselves from much suffering.—*Popular Science News.*

EDITORIAL REMARKS.

It may be a question with some why more of us are not affected—yes, destroyed—by these poisonous germs, if they are indeed so prevalent. It is largely because of the wonderful power of our organization—especially in a state of health—to resist their effects. Physicians are seldom inoculated by the contagious diseases they are so constantly in the midst of; and nurses and others are seldom attacked. This is not a reason why those who are well should not shun miasmatic atmospheres and contagious diseases, but it is a cause of thankfulness that there is such a resisting power within us, and an important reason for preserving ourselves in vigorous health. Then, again, persons diseased are often in a condition to resist contagious disease. It is on the principle that two great abnormal actions cannot exist in the system at the same time. For the same reason typhoid fever and diphtheria, chicken pox and measels, small pox and scarlet fever—no two of them are found together. The condition of the atmosphere has also much to do with the contagious power of these disease germs. A single case of small-pox or diphtheria or measels will sometimes infect a whole community almost simultaneously; at another time, there may be several malignant cases in one house and yet others in the same neighborhood be exempt. For some days, it may spread with fearful rapidity and quickly prove fatal, then all of a sudden, not only cease to be contagious, but the worst cases immediately convalesce, and the whole plague disappears.

Saving Pulps.—There are a great many who are saving pulps now who did not do it ten years ago. I have had men tell me that I have said that I never destroyed a pulp. I did not say so, and I did not mean so. I say that in the last twelve or fifteen years I have not purposely destroyed a pulp, and I have not had anything in my office with which to destroy it. I make an effort with every pulp to save it alive. That I do always save it, I don't pretend.

DR. GEO. A. MILLS.

AMALGAM.

THOMAS FLETCHER, F.C.S., WARRINGTON, ENGLAND.

Dr. L. P. Meredith says: "There is a compound . . . which goes by the gentle name of amalgam. I pause upon the threshhold of this subject, as I feel my utter *incompetency* to do the subject *justice.*" If he had, after giving so good a reason, left the subject alone, one could not have well found fault, but unfortunately he is not satisfied with the simple statement, but goes on to prove it in the most thorough manner possible. He begins: "the mischievous agent is mercury, which causes soreness, swelling and ulceration of gums and tongue, profuse salivary flow, coppery taste, loosening, blackening and decay of the teeth, gangrene, etc., etc." In answer to this I can only say, that in twenty years I have not seen a single case such as he states caused by amalgams in the mouth, although I have seen thousands of amalgam fillings; that the experiments of Dr. Bogue prove most conclusively that mercury is *not* absorbed in the most minute traces from amalgam fillings under the conditions found in the mouth in any degree. I see plugs of these materials which have been in the mouth from twenty to thirty years, which are invariably as satisfactory as fillings could be in every respect, except as regards surface discoloration, and any operator, who has had much experience with these, speaks most positively as to the uniform success and satisfaction he has with their use, with the one exceptional point of discoloration of the surface of the plug. He says: "And now we will consider another of the evil effects caused by amalgams, and that is galvanic action."* He refers to the coppery taste caused by plates of dissimilar metals, being apparently ignorant of the fact that these plates of *dissimilar* metals are necessary to cause galvanic action, and that alloys act as single metals when used as battery plates, notably brass, which will replace copper in Wallaston's battery, platinized silver, which acts as platinum alone would in Smees' battery, and last, but not least, the alloy of mercury and zinc which offers a resistance to acid solutions incomparably *greater than zinc alone,* the zinc becoming soluble *only when in contact* with a plate of a dissimilar and less soluble metal. He refers to "every-day schoolboys' experiments" to attempt to prove his assertions. I would suggest his attention to these "every-day schoolboys' experiments,"

* We are astonished that a man of Dr. Meredith's reputed attainments should not reflect that for the amalgam in a tooth to act as a battery, there must be two pieces of dissimilar electrric metals. In the case of the amalgam filling, therefore, where are the opposing poles? Even if the silver and the tin of the amalgam were separate they would not be such metals as to produce opposite poles, neither would they if there were a multitude of such fillings in the same mouth. Besides, if there were some fillings of positive and some of negative metals in the same mouth, where is the connection? The teeth are non-conductors, and the fluid of the mouth is not sufficient of itself. Then where is the battery?—ED. ITEMS.

the value and force of which he apparently does not appreciate. If they were not amply sufficient to upset the galvanic action theory, the amalgam of palladium and mercury, two most dissimilar metals in every respect, would in itself be sufficient to do so—as it is known by every operator who has used it not to discolor the dentine or to cause the slightest change in any number of years. Further than this, my own experiments have proved beyond doubt that the failure of amalgams, discoloration of dentine, etc., are caused simply and solely by the alteration of form of amalgam plugs by the mechanical interference of moisture by capillary action, and that the discoloration, under ordinary conditions, is in precise inverse proportion to the power of the amalgam to retain its form under water. He then details the "chemical action set up by the galvanic action." "The electrical current decomposes the water of the mouth; the hydrogen set free combines with the chlorine of the chloride of sodium present! The oxygen combines with the nitrogen form, decomposing food, etc., and forms nitric acid! The union of the two giving us *aqua regia*." Now I want to know where the sodium is all this time, and why it does not take up the oxygen, as it certainly would if it had a ghost of a chance? Surely the schoolmaster is abroad who teaches elementary chemistry.

Dr. Meredith again says: "It is useless to attempt to answer these indictments against amalgam by advancing occasional instances of persons who have had considerable amounts of it in their mouths for years, and yet enjoy good health, and have retained their teeth in fair condition. It may be that isolated cases exist which we do not understand." Here he has at least hit the nail on the head with a vengeance. The isolated cases are those which occur in the practice of the few dentists who have taken the trouble to understand the material they use, and to use it in a proper manner. Some dentists object to blame themselves when they fail, and therefore do not understand the success of others. Again, "certain it is, at least, in all cases that amalgam plugs become unsightly, that there is always more or less shrinkage around them, etc." As regards shrinkage, a plug of precipitated silver expands so much as to visibly lift above the level of the tooth, and to burst it open if weak and much undercut; palladium amalgam and precipitated copper amalgam cannot be found with a probe, if inserted with moderate care; an alloy of two equivalents silver, one equivalent tin, with ten per cent gold, expands in hardening, (although from other causes it is unfit for amalgams) as do many other alloys. Shrinkage therefore does not always occur. "Besides, alveolar abscess occurs much more commonly associated with amalgam fillings than with any others." This is easily explained by the simple fact that amalgam is used frequently as a last resource, and its use is in most cases accompanied by carelessness on the part of the operator. With equal care, knowledge and judgment, the failures with amalgam would

be more rare, taking every case which presents itself, than with any other known filling. As a grand climax he concludes: "I would not be understood to say that amalgams should never be used . . . ." and then goes on to detail the conditions and mode of using amalgams, which, unfortunately, are precisely those which the whole of the experiments ever published go to prove as the very worst possible, and which entail certain ultimate failure. I should recommend Dr. Meredith a little quiet study of the "Transactions of the New York Odontological Society," a little private careful experimenting, and a little careful work in the mouth with this material which he states is the cause of so many of the evils flesh is heir to, but which he has still the audacity to recommend shall still be used, notwithstanding the fact that if his statements be true, the operator would be pretty nearly committing murder. After his study and experience he would perhaps not feel so fully his "utter incompetency to do the subject justice," which he has so clearly and fully proved.—*Missouri Dental Journal.*

DENTAL ASSOCIATIONS MEETING IN MAY.

California, Tuesday, the 22nd. Pres., Dr. Wm. Dutch, San Francisco; Sec., Dr. S. E. Goe, San Francisco.

Connecticut, at Hartford, 3d Tuesday. Pres., Dr. R. W. Brown, New London; Sec., Dr. Geo. L. Parmelee, Hartford.

Georgia, at Athens, 2nd Monday. Pres., Dr. Geo. H. Winkler, Augusta; Sec., Dr. G. W. H. Whitacer, Sandersville.

Illinois, at Decatur, 2nd Tuesday. Pres., Dr. Ewd. Noys, Chicago; Sec., Dr. G. W. Wassal.

Iowa, at Council Bluffs, 1st Tuesday. Pres., Dr. E. E. Hughes, Des Moines; Sec., Dr. J. B. Montford, Fairfield.

Kansas, at Hiawatha, Kansas, in joint session with the Nebraska, 1st Tuesday. Pres., Dr. A. N. Calahan, Topeka; Sec., Dr. J. D. Patterson, Lawrence.

Michigan, at Detroit, last Wednesday. Pres., Dr. W. H. Dorrance, Ann Arbor; Sec., J. B. McGregor.

Nebraska, at Hiawatha, Kansas, in joint session with the Kansas, 1st Tuesday. Pres., J. W. French, Beatrice; Sec., Dr. W. F. Roseman, Fremont.

South Carolina, at Cheraw, May 3d. Pres., Dr. B. Buckenfuss; Sec., Dr. G. F. S. Wright.

Texas, at Austin, on the 4th. Sec., Dr. W. R. Clifton.

New York, at Albany, on the 12th. Pres., Dr. L. S. Straw, Newburgh; Sec., Dr. S. A. Freeman, Buffalo.

Vermont, at Burlington, on the 15th. Pres., Dr. L. T. Lawton, Rutland; Sec., Dr. C. F. Lewis, Burlington.

THE GROWTH OF THE TOOTH AND THE CAUSE OF "SENSITIVE TEETH."

BY SAMUEL WELCHENS, D.D.S., ROCHESTER, N. Y.

It is well known to the careful student of dental tissue that the calcification of the teeth is not the work of a day. The process is slow and tedious, and so delicate as to render it subject to the slightest aberrations of the nutritive process, thus causing imperfections of structure, weakness of tissue, and often serious malformation. These are sometimes seen upon the surface, but often are hidden in the body or substance of the tooth when it seems to be perfectly developed. The process of vitrification commences with the dentine, hardening inward from the inner surface of the enamel until the pulp has been reduced to its normal size or limit. After this there is no change in the structure of the tooth, except that which is caused by caries or a slight hardening of the tissue in after life, whereby the pulp is somewhat diminished and the fibrillæ perceptibly shortened by the ossification of the tubuli. Hence we find that in young teeth the fibers which enter the tubes of the dentine, and are elongations of the substance of the pulp, and—especially in teeth that, through some constitutional or nervous weakness, become frail and chalky—spread outward boldly, approaching the surface of the dentine and sometimes even penetrating the enamel, so that they are easily reached either by caries or by an instrument when the disorder is slight and the cavity exceedingly superficial.

We are apt to say of such teeth when treating them that "they are all nerve" It is to this class of teeth and this kind of structure that attention is here called.

The elongation of the fibers above referred to is the result of one of two causes: either a malformation of the dentine in the process of calcification whereby minute fissures are left in its structure, which are usually filled with the albuminous material of the pulp, or through some disturbance of nervous energy during the process of dentition, rendering the whole structure of the teeth frail and chalky, thus causing the extension of the tubes, a necessary provision in the nutritive process, by producing a stimulant which is designed by nature to supply with animal matter what they failed to receive in enduring texture.

We find a similar provision of nature in the vegetable kingdom. A plant or tree, when in active vegetation, throws out fibrils from the main branches of the root, thus obtaining an immense absorbing surface just when the most nourishment is needed. After the season of active vegetation has passed and the plant has borne its fruit, the fibrils die and decay off, and the body of the root receives the elaborated sap, the material for which they contributed so much in gathering up the crude elements from the earth.

The fibrils of the teeth seem to hold the same function, though in

structure and character they are vastly different. In the case of children, when, in consequence of rapid growth, the demand for nutrition in all the tissues is greater than in the adult, and especially when the teeth are weak in texture, the elongation of the fibrils, affording a larger nutritive surface seems to be necessary. And then when time and age have done their work of perfect development, and the teeth are rendered more dense, the pulp containing all the elements of dentine is diminished, the fibrils very frequently, through the process of calcification, are hardened into dentine and disappear altogether.

When a tooth containing these extended tubes is attacked by caries, the disease need not extend far below the surface in order to strike the fibrils and involve the pulp. There may be no soreness immediately resulting than occasionally slight trouble from thermal changes, or the inconvenience of an unpleasant consciousness that the tooth is there, but a discolored tooth, in a year or two after the operation has been performed will tell the tale. How often are we confronted with devitalized teeth in the mouths of some of our most confiding patients, when upon removing the filling we find the pulp dead from an operation which we regarded at the time was performed as perfectly secure and successful, and the failure of which we could trace to no other cause than filling upon the exposed fibers from the pulp. The dangers of thus encountering those vital tissues should be kept steadily in mind by the operator, and when a cavity in the kind of teeth above described extends to any depth below the surface, care should be taken that it receive proper treatment before the filling is inserted.

For the purpose of closing up the mouths of the tubes, and thus protecting the exposed fibers, Canada Balsam is often used.

I think the most scientific and the most reliable treatment that can be instituted is to apply upon a pledget of cotton either diluted carbolic acid or creasote as an antiseptic, and then cover the bottom of the cavity wtth a thin coating of oxy-phosphate of zinc, and fill upon it as soon as it is hard. We have in this treatment not only an antiseptic and a good firm covering for the mouths of the tubes, but the cement being an astringent and absorbent both, the effusions and gases which may be the result of a perfect and enduring substitute is at once afforded.—*District Dental Society, Rochester.*

Dr. Atkinson says the statement that gold must be pure to be cohesive is a mistake. Those who have experimented upon that have said that gold would be cohesive if it had even five per cent of silver in it, if it were only free from other impurities, and in that statement I have full confidence myself. I do not think cohesiveness always means pure gold; as high as ten per cent of silver may be in gold, and the foil or sheet be cohesive.

ONE IDEA.

The man of single purpose, or one idea, as it is commonly denominated, is the object of sport and ridicule, by mankind generally. This may arise from the fact that oftentimes men who concentrate the mind upon one object for a long time, lose their ability and disposition to efficiently exert themselves in any other channel; or they endeavor to make everything bend and become subservient to their favorite object.

Now, though we do not like to see any one blindly riding a hobby, not knowing whither it is carrying him, we do like to see the man of single purpose. One-idea-ism has become almost a term of reproach; and yet almost everybody recognizes the fact that when an intelligent man fixes his mind upon one object, and pursues it perseveringly for a long time, something of interest or value *will be accomplished.* Such a course, without general intelligence, would avail but little.

What would have been accomplished by Watt, Newton, or Morse, if their minds had been alike employed in the various fields of science which lay in their view? Certainly, so far as they are concerned, we would not now have the steam engine, steam navigation, or the electric telegraph. These are the products of *men of one idea.* It is true that these have all been much improved since their introduction; but it has been by men of similar mental dispositions.

Now, we do not maintain that a man should know but one thing. On the contrary, we contend for the largest amount of intelligence upon all scientific and useful subjects; and it is only in the possession of these that the mind can act most efficiently. A thorough knowledge of kindred sciences will enable any one to draw upon them, and make them tributary to his favorite purpose.

When once in possession of all the collateral branches of science, the only method of making that knowledge efficient is to concentrate the mind upon one object, and draw upon all these departments for aid; and they will be prodigal of that aid, just in proportion to their familiarty with them. Hence, we contend for the largest possible amount of both literary and scientific knowledge for the dentist, that these may be made subservient to his art and science.

DR. J. TAFT, Editor *Dental Register.*

Comparative anatomy furnishes us with countless examples of teeth of lower animals which have not a cementum with a highly organized periosteum, and in which the pulp (after once the tooth is formed) retains little or no vascularity nor functional activity. Such teeth are in their entirety, like human enamel, practically dead; but like the similar external layers of epithelium of the skin, they are constantly being cast off and renewed; one might say of them that they were not tolerated long in continuity with the living body. C. S. TOMES.

NEW TREATMENT OF PLASTER CASTS.

In response to the offer of a prize by the Prussian government for a method of so treating plaster casts as that they may be washed, and at the same time that the pores of the material should be so closed as to prevent the entrance of dirt, Dr. Ressig gives two different processes whereby the plaster is transformed into a combination, insoluble not only in water, but in soap suds.

The first method is based on the fact that sulphate of lime is changed by baryta water into sulphate of baryta, a caustic lime gradually transformed by the action of the atmosphere into a carbonate of lime, as we know from the similar action of plaster and mortar. Baryta water is prepared by slacking together in a securely corked bottle one part of crystallized hydrate of baryta with about twenty parts of rain water, thus forming a saturated solution. After it has cleared, it is sponged or poured over the plaster as long as the cast will absorb it. The cast is then dried moderately and more baryta water applied, if it still takes it in. This treatment, besides hardening the cast, gives it a beautiful white and clear appearance.

The other method is by using a silicate of potash. To obtain this, water containing about ten per cent. of caustic potash is heated to 212° F., and to this is added as much silicate acid as the potash solution will dissolve. Some clay and silicate of potash are precipitated on its cooling. Preserve this liquid in stopped bottles until no signs of turbidity are seen. When about to use it, throw in a small piece of potash—one or two per cent. The solution is applied by dipping the cast, or by applying the liquid with a sponge or spray. An almost instantaneous change occurs, when the superfluous solution should be washed off with soap suds. Some practice is necessary to determine the time of exposure by this last method.

Casts thus treated are no longer, so far as their surfaces are concerned, plaster, and are very hard and durable. They are still, however, porous, and absorb dirt. To close the pores, dissolve one part of castile soap in ten parts of alcohol, and wash the cast with this, which will close the pores. A better way, though more expensive, is to dissolve steatite of sodium in pure spirits of wine, and warm the cast before applying. This gives an almost vitreous appearance to the cast, and produces an exceedingly beautiful appearance.—*Dental Science.*

Sodium Bicarbonate as a Remedy for Burns.—An English chemist laughs at the idea of bicarbonate of sodium—common baking soda—being a new treatment for burns. He says that in England, twelve years ago, it was known to all working chemists. When in the laboratory, if he was burned by any mixture, he would run to the soda-drawer, grasp a handful, and plunge his hand into water, getting instantaneous relief.

CRUELTY TO PATIENTS.

BY J. F. ADAMS, WORCESTER, MASS.

[Read before the Massachusetts Dental Society.]

We all know, and our patients know, that teeth cannot be thoroughly filled without inflicting pain, and oftentimes severe pain; but the fact that they expect to be hurt, is no excuse for any carelessness or falsely called "heroic practice" on our part. Our duty to them, in this respect, demands constant watchfulness to guard against that contempt for pain which is too often bred by familiarity. We are constantly in danger of growing indifferent to the suffering which we inflict, and of forgetting that the organs upon which our operations are performed contain the most sensitive nerves in the body. Not to consume your time with remarks of a general character, and to make this paper a practical one, I will take up the subject in detail, and ask you to follow me through the steps necessary to be taken in some of our commonest operations; not with a view of showing how these operations should be performed, but hoping to offer a few suggestions which may result in the prevention of some pain. We will take, for example, the filling of proximal cavities in bicuspids or molars. Our first step, if the teeth are in close contact, will be to obtain space, and we have three methods from which to choose.

1st. Immediate wedging. 2d. Separation by gradual pressure by means of wedges, rubber, tape or cotton. 3d. By cutting away the substance of the teeth with the file, chisel, or disk.

For producing immediate separation we have what is known as heroic wedging, and an instrument called the Jarvis separator. Of the latter I cannot speak from personal experience, but should think there might be cases where but little movement of the teeth was desired, in which it could be used to advantage.

Of the former practice, that of pounding in wedges with a mallet until they can be driven no further, or, in the language of a celebrated advocate of this method, till the mallet redounds, it may be said that the heroism is all on the side of the victim who sits and endures the pounding; and it demands that the patient should be, as the operator quoted desires his patients to be, "terribly in earnest."

It has been claimed by the advocates of this method that the pressure produced upon the dental nerves by the sudden movement of the teeth, paralyzes them to a certain extent, thus lessening the pain of excavating; but could not the same result be produced by a blow on the head with a heavy hammer, and with much less suffering to the patient?

Occasionally it has been found that this paralysis has become a permanent condition, a dead pulp being the result of the violent treat-

ment, and where this is not the case the teeth often remain sore and uncomfortable for months afterward.

If there are any members of the society present who are practicing this method, who have never experienced the sensation upon their own teeth, let them have a clinic among themselves before the close of this meeting. It may be the means of preventing some cruelty to their patients.

We will next consider the process of separation by gradual pressure. In this, care should be exercised that the substance introduced be not too thick, as carelessness in this respect may result in severe pain, with, perhaps, a sleepless night for the patient. There will necessarily be more or less discomfort and annoyance attending the process of separating, but there need be no actual pain, or any great amount of soreness.

In most cases sufficient space can be gained in three or four days, and if two or three days more be allowed for the tooth to rest, the slight lameness existing will usually subside and the tooth be ready for filling. Where rubber is used, as soon as space is obtained it should be removed and its place supplied by some unyielding substance, as the elasticity of the rubber permits the constant motion of the teeth in occlusion of the mouth, and will keep up the soreness as long as it remains. Gutta-percha is a good material to use for this purpose. If in the case before us, we decide to separate by cutting away the teeth, we have three instruments for the purpose: the file, the chisel, and the hard rubber corrundum disk. In the good old times, the file was the main reliance, and coarse rasps were vigorously used for the purpose; and though there is usually no very severe pain attending their use, the sensation produced is commonly described by patients as "horrid," and, according to my experience the expression is none too strong. Fortunately there is very seldom any need of such instruments being used, though a *thin* file, never thicker than a No. 1, is generally necessary to open the way for the chisel or disk, one or both of which will effect the separation much less disagreeably than the coarse file. In case of extensive decay, leaving thin walls, no file is needed, except for smoothing the edges after the teeth have been cut away. Having effected a separation, suppose we find two large cavities extending high up beneath the gum; our next move will be to obtain free access to all parts. How shall this be done? Evidently in the case under consideration a wedge cannot be pushed through from the buccal to the palatal side high enough to expose the cervical walls of the cavities, without passing through the gum and coming out somewhere in the roof of the mouth. To obviate this difficulty, a writer in one of the dental journals recommends passing the lancet through between the teeth, making a cut extending up to the alveolar process, and through

this cut pushing the wedge. If it is found not to be high enough, a second is introduced over it, and the first is removed—a third or fourth is inserted in the same manner if necessary!

Such treatment as this would scarcely be admissible in the case of a mother-in-law; but to adopt it as a general practice would require a development of buccal tissue, greater, it is to be hoped, than most of us possess. Now, while there is no way in which a wedge can be introduced, in these cases, so as to give positive pleasure to the patient, let us see if there is not a better way than the one described, viz: Take a piece of hickory, or other wood of firm fiber, which will bend without breaking, cut it to about the proper size, then, holding the end on some smooth surface, bend it by rubbing with a burnisher, until the curve corresponds to the curve of the cervical walls of the cavities, or approaching that. Next, trim till it is found by trial to be of the exact width required. It is then taken in the left hand, passed between the teeth so that the end shall project about one-eighth inch on the palatal side, and with a suitable instrument held in the right hand, it is pressed up against the gum, not forcibly, but with a gentle but gradually increasing pressure until the cervical walls are clear, when a slight push with the left hand, exerted longitudinally, will fix it in its place. It is then cut off, leaving the end projecting the same as upon the palatal side. Sometimes, when we have the V-shaped space opening on the palatal side, it is best to introduce the wedge from that side, which can readily be done. If the operation has been performed with due care the patient will not complain of it as a severe one. The gum may be slightly bruised, perhaps, but there will be no laceration as in pushing the wedge through. In applying the dam both teeth are embraced in one hole, the rubber is tucked under the projecting ends of the wedge and pieces of spunk packed into the angles [moistening the spunk with gutta-percha varnish will make it more secure against moisture—Ed. Items], which will render the work perfectly secure from moisture if the operation be upon the upper jaw, but for lower teeth it is safer to apply the dam before the wedge in the ordinary way, though a little more difficult to accomplish. The holes should be punched quite near together, so as to have but a narrow strip of rubber between the teeth. After applying the dam, care should be exercised in drying the cavities. As every one knows, a very severe pain is produced by the rapid absorption of all the moisture from a sensitive tooth. The first pledget of paper or spunk introduced gives no pain, the second little or none; but with the third, the capillary force is exerted upon the moisture contained in the dentinal tubules, tending to produce a vacuum, and thus pulling on the nerve fibrils. The probable reason why spunk gives more pain than paper is, that being softer and of finer texture it is brought in contact with a larger

number of the open mouths of the tubules at once. To avoid pain from this source we should stop short of absolute dryness. It is not necessary that every particle of moisture should be removed at this stage of the operation.

The only way in which I have been able to reduce the sensitiveness of the dentine, has been by the use of temporary fillings, either of oxyphosphate, or gutta-percha; something to keep out the irritating secretions for a few weeks.

During the process of excavating, if our patient be a nervous female, she will need all the encouragement which we can give her; not by the soft, sickening twaddle with which some dentists regale their lady patients, nor by patting the cheek or hanging over her as if she were a sick lady, but by kind, reassuring words; but above all, by a gentleness of manner and touch, convincing her that we do not willingly inflict pain. At the same time the work should not be done timidly, but with a firm, steady hand. There should be no scratching around in an aimless, uncertain way. We should have a definite object for every stroke, and not make one cut more than is necessary. Our excavators should be sharp and well tempered, with not too much spring in the shaft, which causes a jumping of the instrument, producing a succession of shocks. The hoe excavator gives less pain than the hatchet, because the motion being in a line with the handle, there is less vibration. For removing the decay over a nearly exposed pulp, the spoon-shaped hoe is best adapted, and it is needless to add that it should be held very lightly and the slightest possible pressure made upon it. Much needless pain is inflicted with the engine by holding the bur too long upon the tooth at a time, allowing it to become heated. Every operator knows this, but not every one is careful enough in guarding against it. Many object strongly to having the engine used upon their teeth, and when the work can be done equally well without it, their wishes ought to be respected. [Often it is better to leave a portion of the soften dentine over the nerve, hardening it by a touch of equal parts of oil cloves and creasote or a temporary filling of phosphate of zinc or a permanent filling of this material to be partially cut away and capped with gold or alloy.—Ed. Items.]

The introduction of the filling is a tedious rather than a painful process, the principal dangers to be guarded against being the slipping of the instrument; the bruising of the lips by inadvertently pressing upon them; and the undue stretching of the mouth. The cheek should be gently lifted from the tooth rather than pulled back. The cavities can thus be sufficiently exposed in a majority of cases, especially if we know how to use the mirror. In packing with the mallet, it is not necessary, for the proper condensation of the filling, to strike very heavy blows. While some of our patients will very soon inform us if

we are pounding them too hard, there are many timid ones who will sit and suffer and make no sign, except by the contraction of the supercilliary muscle, which is thus an excellent indication of the amount of force we may give to our blows. So long as the brow remains unruffled, we need not fear that our patient is suffering severely.

When condensing the filling by hand-pressure, if you allow the instrument to rest on the adjoining tooth as a fulcrum, bear in mind that you are using a powerful lever and regulate the amount of force accordingly; this caution is specially needed if either of the teeth be unsupported. The fillings being packed and condensed, the wedge should be allowed to remain until they are ready for the final polish, which can best be accomplished with the soft rubber disk.

The tying of a ligature tightly around the neck of a tooth is a painful process and should be avoided whenever possible. When the wedge is used in connection with the dam, ligatures are seldom needed at all, but when they are called for there is no need of tying them so tightly as many are in the habit of doing. The rubber dam clamp, a very useful appliance, may become an instrument of torture if carelessly applied. The operator should never fail to ask the patient if it hurts, and if it does, it should be readjusted or changed for another, the only cases where it need give pain being in pressing down below the margin of a buccal cavity, or where a tooth is but partially erupted.

Labial cavities, where there is recession of the gum, may be filled with much less pain than they often are, by using a clamp adapted to the purpose, and allowing its inner jaw to overlap the gum, which is protected by a thick piece of spunk. No ligature is required for the dam.

Saving Pulps.—For myself I may say I always try to save all exposed pulps. I believe I have not dressed a tooth with a view of destroying the life of the pulp in five years. That I have succeeded in my efforts in all cases I do not say. We all have our "funerals," I suppose. I have used the Canada balsam some years, sometimes applying several coats over the exposed portions of pulp, regarding the anæsthetic effects of the chloroform upon the pulp tissue as valuable. I have never allowed oxyphosphate of zinc to come in contact with a pulp. I have no doubt we are all earnest seekers after truth, but I sometimes feel that little is established as truth; perhaps I am skeptical. I think we might very profitably discuss the causes of our failures in attempting to save exposed pulps. I should feel culpable, indeed, if I had had "supreme control of my patient" from early childhood, and allowed any pulp to become exposed. I hope we may have reliable statistics gathered from the practice and experience of earnest men to assist us in our estimates of methods and principles. DR. CRANDELL.

ARTICLE V.

ANSWERS TO THE QUESTIONS OF THE NATIONAL BOARD OF DENTAL EXAMINERS, FOR THE BENEFIT OF DENTISTS AND STUDENTS.

PREPARED FOR THE "ITEMS" BY W. S. ELLIOTT, M.D., D.D.S., NEW YORK.

What are the chemical constituents of dentine and enamel, and what are the proportions of each?

What are the chemical constituents of saliva?

It is a vast stride when we pass from the consideration of the first principles of chemical science to an analysis of the reactions that take place under the circumstances of the highest order of animal function.

The mysterious forces that pervade our being; that make up the issues of life, are, by no means, the tangible things that the senses easily take cognizance of. We note the outgoings and the incomings, but grasp but little of the order of these phenomena, and the correlated phases that constitute the serial stages from inception to consummation.

We know that we live, but we know little of what constitutes life. We analyze it and discover only differentiations of an occult power that manifests itself in some way in every object in nature. From atomic to systemic life the same power is all-pervading. It controls according to the requirement of circumstance. The crystal, as well as the rose, blossoms in the scintillations of a radiant sun, but its destiny is fully consummated in the plane of its facets. The atoms of its constituents move to the power that blends with them, and in molecular congeries they unite to abide the issues of their being. The plant is of a wider destination; it has a higher life and invokes a higher radiancy, that lends to it its tints. The crystal hides no light in its cavernous recesses. Its chemistry is limited to the possibilities of its environment. The plant faces the light, and receives its impulses; it drinks in the energies that surround it; it breathes; it circulates a life blood; it lives and it generates its kind. It includes all that belongs to the life of the crystal, but it has imbibed also other energies and has passed to an exalted stage of existence.

The elements that enter into the inorganic kingdom are especially fast bound in their affinities. They are noted for their stability; and ages rather than years, or succession of seasons, mark the term of their duration.

The monarch of the forest bends its branches to the blasts of an hundred years, but its roughened old trunk soon yields to oxydation and dispersion, and the new life that follows the seed time instances the ever

"* * * perpetual round of strange, mysterious change."

The mathematically-formed plant cell is the counterpart of the crystal, but constructed by more complex energies and is differentiated accordingly. The molecules that enter therein are laid down in obedience to the same law, but the plan is modified by varied combining forces working harmoniously to the accomplishment of the end.

Plant life is eminently one of reconstruction, one of synthesis, one of preparation. It gathers in the products of combustion; re-assimilates the carbon that is to constitute its frame work; it appropriates the ashes of the earth and the ammonia of the atmosphere; and finally, in the ripeness of its career, it affords food for the building up and sustentation of the animal body.

The essential element of these more complex forms is nitrogen. Negative in its free state, inert and undemonstrative under ordinary circumstances, yet, by various oblique methods it will combine with other elements to form the most important compounds. In these the stability of the primary forms of matter is lost. The bonds of affinity are weakened by distribution, and thus the higher forms of organization are the more easily made to succumb to external influences.

C, H, O are the principal elements involved in the inorganic kingdom. The organic includes C, H, N, O, P, S, Fe, Si, Ca, variously combined. Besides the mutual affinities which exist between these, other forms of force—as heat, light and electricity—enter in as constituents to enhance the possibilities of a higher phase of life.

What, then, are the recognized products of the combination of these energized bodies? The first formed is protoplasm. This was formerly described as a homogeneous, transparent, jelly-like substance, capable of motion, growth and propagation. Since the presumed homogeniety, however, has given way to the recognition of a definite structure, we learn that this first form really embraces all that is known to exist in the most advanced organisms.

The maintainance of a chemical equilibrium demands, then, the most favorable environment, and wherever we direct our observations we must appreciate the many influences, normal and abnormal, that are coincident.

Applying these generalized observations to the human organism, we perceive how subtle are all the conditions which fall to our notice for analysis.

The mere naming of constituents is quite preliminary to a knowledge of the career of the elements in their evolution toward a completeness of function; but to meet, perhaps, more directly the main object of the questioner we will in another article review the authorities upon the subject in hand.

To command your position you must first obey its demands.

CRITICISMS ON "MOTHER'S" LETTERS.

BY J. F. SANBORN, M.D., TABOR, IOWA.

The prime object of a professional journal is to impart instruction and entertainment to its readers, and we have received as much satisfaction in perusing the pages of the ITEMS as any journal that comes to us. The diversity of opinion therein expressed, shows that thought is like a sea in constant commotion, and as the various elements come to the surface, they are photographed for the pages of the ITEMS.

We have great respect for "Mother," and when she comes to us with instructions, founded on the experience and observations of a lifetime, and her conclusions selected from the best authors of the age, it is with great reluctance that we present conflicting views.

In the March number, page 131, she says: "Peas and beans, containing a large amount of carbon, readily satisfy the appetite, but containing no phosphates, they add nothing to the strength of the body."

As both peas and beans are very rich in the approximate principles that nourish the muscles and adipose tissues, we do not see why they should not add strength to all parts of the body, except the bones. At the end of the article she says the facts were obtained from "Food and Diet," by Jonathan Pereira, M.D., F.R.S., and he quotes from Liebig.

We find in "Food and Diet," page 30: "As the component parts of the bones (phosphate of lime and magnesia) are absent, they satisfy the appetite without increasing the strength." Which we understand to refer to the bones instead of the body.

We find on page 162 of Pereira the following, as a condensed analysis of peas and beans, and compare it with that of wheat, as given by Pereira, on the organic part, and by Johnston for the inorganic. (See Johnston's Agricultural Chemistry).

	Peas	Beans	Wheat
Non-Nitrogenous	62.81	58.19	75.36
Nitrogenous	16.28	21.72	12.00
Inorganic	6.56	3.46	1.17
Phosphates	.34	.62	.23

The phosphates are embraced in the inorganic, as above stated, and constitute the earth of the bones. From this analysis we see that peas and beans are more abundantly supplied with *bone-making materials* than wheat; Liebig and Pereira notwithstanding.

She further quotes: "Animal diet yields a larger amount of nourishment than vegetable."

The highest per cent at which we have seen any author place meat was from thirty-five to thirty-nine, while the wheat, peas and beans are quoted as being from eighty-two to ninety-two, or more than twice as nutritious.

We have had "Mother's" favorite author in our library for twenty years, and have considered many of the statements very far from being according to the teachings of more modern authors.

"WRITE PLAIN ENGLISH."

I have before me copies of three or four prominent dental journals, and I am free to admit that many of the articles written therein, and by some of our best known practitioners, are almost of no benefit to me. At least they fall far short of doing the good they ought to do, because interspersed with so many technical terms. I have not the time to put what they have written into plain English. They are too very professional. The majority of dentists who have a fair practice, can scarcely find time to unravel their meaning. Life is *too short*, and our professional duties *too pressing*, to permit us spending three or four hours trying to understand that which some *learned brother* has taken weeks preparing, using language of the most technical authors. The impression seems to prevail with many contributors that the more *scientific* and *foreign* words they can use, the more highly educated and professional they will appear. The fourth item of advice which you give on the second page of the cover of the March ITEMS is just to the point. Let me quote it:

"*4th. Write plain English.* Some difficult professional terms are now and then necessary in professional essays, but a good writer will generally choose ordinary English words where these are available. They are not usually our best writers and thinkers who deal largely in foreign phrases and highflown expressions. Strong, well-informed minds use simple, terse, unmistakable language; and, with most of us, how many unusual and imperfectly understood terms might be advantageously changed for good old Anglo-Saxon words, brief, clear and forcible."

I am glad to notice that generally the articles published in ITEMS are so plain and practical. They are such that a busy, working dentist can read, understand, digest and act upon.

CHARLES M. HOWE, D.D.S., Passaic, N. J.

"Look out!" said my patient. I looked out, and assured her I saw nothing wonderful.

"O, stop!" said she. I stopped looking out, but, of course, worked on.

"I can't stand it!" she ejaculated.

"Oh, I will stand it," said I; "you may remain sitting."

"But it hurts," she continued.

"Yes, the handle of my instrument is sharp-angled, and—"

"Oh! it hurts awfully!

"Yes," I replied, "my hand is almost blistered, but I am determined to be thorough; thanks for your sympathy."

She threw her head back, and looked up with a wild stare. "Ah," said I, "how pleased am I to see you look heavenward; should you look toward the other place I should fear you were suffering."

THE SCIENTIST VS. THE GENERAL.

Though great praise is due, yet it has been inadequately rendered to such men as Liebrich and others, who in the noisome fumes of the laboratory are determining by close observation and careful experiment the action of remedies upon the animal body—the frog, pigeon, hare, and dog lending their bodies for this purpose. *Inadequate*, I say, is the praise which the world renders to such men; for while every school child is familiar with the names and exploits of Alexander, Cæsar, and Napoleon, such names as Dare, Hunter, Jenner and Lister are hardly known. The destroyers of the race have been idolized, nay, deified, while its true benefactors have lived and died leaving but slight hold on human memory. And what is still more to the honor of these benefactors is that they labor with the foreknowledge that the field in which they toil brings but stunted laurels. The child named Alexander or Napoleon knows not the name of Jenner, whose great discovery has rescued it from permanent deformity, if not from a loathsome death. And all this is owing to the truth that the precious standard of regular medicine has ever permitted but one inscription on its banner, namely, MODESTY.—L. C. LANE, M.D.

Filling Root Canals.—I have sometimes employed threads of dry shellac for filling roots which are so small as to render it very difficult or impossible to fill them with the materials ordinarily in use.

If it is drawn out into fine threads, it is flexible and elastic, and will pass anywhere where the very finest hair bristle will pass; at the same time it is brittle enough to break off readily without withdrawal, and so soon as no more can be introduced by the side of that already in, a drop of spirit running up by capillary attraction fixes it and converts it into a very perfect filling even in very small and curved roots. It possesses this one advantage over all other root-filling materials with which I am practically acquainted: it can be introduced even into the finest root, and a perfect filling made without any danger of a piston being formed to force out septic matter from the end of the root.

A little patience and hot instruments will get it out again from a large root, and I have had to thus remove it, but it would be all but impossible to get it out of a very narrow canal, and hence its use is limited to those cases in which one feels tolerably sure of not having irritation to follow the filling. This same objection, however, applies to all perfect fillings in minute roots. I leave wool, of course, out of the question, as it is simply impossible to get it up such roots; but with shellac roots can be perfectly filled which cannot be filled with any other material with which I am acquainted, not excepting gold wire, as the threads of shellac are easily made of a degree of fineness not readily attainable with a very soft gold wire. C. S. TOMES.

LEARNING AND DOING.

The well worn debate upon the relative value of ancient and modern languages as means of education has recently been in some degree revived by an able defense of the latter by C. F. Adams, Jr., before the Phi Beta Kappa Society, in Cambridge, Massachusetts. Whatever may be the merits of this much-vexed question, upon which the best educators of the day are still at variance, there is one point suggested by it of the most practical importance, not only to collegians, but to all the young people of our land, viz.: How far does the early training which they receive fit them for the real duties of life which await them? Are the few years which intervene between childhood and manhood made the most of as a means of preparation for the future? Of course, the advocates of classical study and their opponents equally claim this as the great end in view; but, perhaps both, in their eagerness to promote their own cause, are in danger of over-estimating it as an actual factor in the case. It is, doubtless, an important matter to one pursuing an extended course of mental discipline, which of the many branches of study he shall take up; but it is still more important whether his school and college life, as a whole, is such as will best fit him to enter manhood well equipped for its duties.

It is at least questionable whether in a large number, perhaps a majority of cases, the most urgent necessity is not so much to decide on the kind of mental food to be offered to the student as to stimulate within him an appetite for *any*. It is of little use to discuss learnedly the comparative value of oatmeal and meat for a stomach which cannot digest either, and the comparison of Greek and Latin with French and German for many young people at least bears a strong resemblance. The difficulties of education lie deeper down than the curriculum. It is not so much finding out what to teach as how to develop the mental and moral energies that is needful.

It is to be regretted that so wide a difference exists between the employments of early years and those of manhood and womanhood. That fifteen or twenty years of life should be spent in *learning* without *doing*, and the rest of it in *doing* without *learning*, cannot be a wise arrangement. The break is too sudden. The youth, on leaving school or college, is at once plunged into a new world, requiring qualities and abilities that have never hitherto been called forth, and he finds it hard, if not impossible, to make his mental possessions available for practical use. If young people were accustomed to *do* more, and older ones to *learn* more, life would be happier and more successful. In fact, these two should never be separated, but act and react with each other all through life. Just as the earth is ever receiving sunlight, air and moisture, and at the same time giving out her blossoms, fruit and fragrance, so our best interests demand a continual taking in and giving

out—a perpetual alternation between learning and doing from the earliest to the latest years. Whatever tends to divorce these, or to limit them to different epochs, banishing the one from youth and the other from maturity, must be detrimental.

Not only in school and college life, but in home training, and in preparation for business and even sometimes mechanical employments, the same mistake is apparent. The period of learning is often lengthened and wasted by never introducing into it responsible duties of any kind. When, at length, the learner comes to assume them, he is overwhelmed with his new obligations, and with all his acquirements he is still unfitted for the task. If this could only be fully appreciated the efforts of educational reformers would take a somewhat wider range than heretofore. We admit that the difficulties involved are great, far too great for any solution. It is so much easier to make this abrupt division than to combine the two that we have come to regard youth as merely the time for receptivity, and that is probably the chief reason why there is such a lack of practical and thorough preparation for the duties of maturity. No faculty is developed, no quality is acquired, no power is gained except by constant exercise; and if we desire our young people to grow up into useful men and women, we must accustom them gradually but steadily to assume responsibility, to exert their will and force of character, to give out as well as to take in, to act as well as to learn. Then life will be a succession of steps naturally following each other, each of which will prepare the way easily and thoroughly for the next, and each of which will bring new light, broader views and higher abilities to bear upon increasing duties and responsibilities as they arise.—*Ledger.*

Effects of Systemic Disease upon the Developement and Health of the Teeth; by Dr. Atkinson. To understand the manifestations of health is especially requisite to the acquaintance with disease. Health is that state of the body that results from the full performance of all its functions. Systemic diseases may so derange the nerves of the body as to degenerate the chemical solids of the tooth substance, and thus destructively affect the teeth. When this occurs during the development of the teeth, they are impressed at the points, indicating calcification at the time, or arrest in growth until the disease has been corrected. When the elements requisite to the conception of perfect teeth are deficient in the food supply, we shall have a corporized pabulum, from which we cannot obtain very many teeth. In this case it seems to be an inability of the appropriate cells to take up the deciduous elements and deposit them in their destined places, more than a lack of those elements in the food supply. As the teeth are developed once for all, special care should be devoted to hygienic principles. Skin diseases

are capable of affecting the teeth so as to render them liable to disease. Most of the constitutional disturbances of childhood have their seat in the mucous and dermal tissues. These functional processes depend upon a variety of circumstances connected with the habits, the food, and the associations of the child, usually called hygienic conditions, and when perfect regularity is secured, we may confidently expect the legitimate performance of all these functions. The next point is to prevent the exposure of the child to morbific agents, the contagion of which sets up the various forms of eruptive diseases, such as varioloid, scarlatina, etc.; the well-known effects of which are so frequently seen at the point corresponding to the state of development of the teeth at the time children are under the control of disease.

The Vitality of a Tooth.—The most highly organized parts of the body, those most alive, so to speak, are always protected by being buried away in its interior; external parts, subject to the changes of contact with the outside world, are protected by tissues less fully alive. Thus we are coated over with an epithelium, the deep portions of which are active cells, soft and full of plasm; the superficial layers are horny and all but dead, and as they become quite dead, or perhaps after in their dead condition they have remained a short time adherent, they are shed off. Other instances might be adduced, but this one will suffice to indicate the meaning, which is this: Our highly organized live bodies are made fit to encounter the world by being coated with succcesive layers of less highly organized tissues, till at last in the outermost epithelium we come to something practically dead. This is tolerated because it is gradually led up to, but after all it is not very permanent and is constantly being cast off and renewed. I cannot stop to point out how true it is to say that teeth are but skin appendages; but will simply point out that in their outer epithelial layer, the enamel, they are all but dead; that this nearly dead tissue is brought into continuity with the actively live organism by the intervention (i.) of dentine with its tooth-pulp, and (ii.) cementum with its alveolo-dental periosteum; in other words, in the case of a perfect tooth and its surroundings very highly organized tissues are not asked to tolerate in contact with them that which is practically dead, without the intervention of other tissues less highly organized, so as to bridge over the abruptness of the change. C. S. TOMES.

Gutta percha may be made to stick to the walls of the cavity being filled by it, by carrying into the cavity a drop of gutta-percha varnish just before inserting the heated gutta-percha. The varnish will also be found almost entirely to compensate for the little shrinkage of the filling. This is quite a consideration.

THE DISCOLORATION OF GOLD FILLINGS.

Some think it is caused by the presence of traces of iron. Professor T. H. Chandler says: "To make a crucial test, some gold was purposely alloyed with iron to the amount of one-half and one grain to the ounce, by Mr. Hood, of the firm of Hood & Reynolds, and he had two large compound proximal and crown cavities in bicuspid teeth filled with it, using the half grain in one, the one grain in the other. The iron shows plainly in the foil when heated to a red heat, appearing of a dark coppery red. This foil is cohesive when slightly warmed, but when heated to a red heat, so as to bring out the oxide of iron, utterly refuses to cohere. These teeth were filled in September last, and to this day show not the least change, no special attempts being made to keep them clean, but if anything they are studiously neglected."

And yet the Professor finally comes to the conclusion that it is the steel instruments used in filling teeth which gives the surfaces of some fillings their dark appearance. Hear him:

"I have been able, therefore, to come to no other conclusion than that a very large proportion of discolored gold fillings are caused by the oxidation of the minute particles of our steel instruments which are worked into them in the process of making the filling, and that the discoloration is in direct ratio to the amount of pains taken in performing the work; that there may be other causes is not to be doubted, but that this is the principal one seems as little doubtful. An easy test, which any one may make for himself, is to take a strip of heavy foil, rub one end of it thoroughly with a steel burnisher, and then melt both ends in the flame of a Bunsen burner, when it will be found that the untouched end will melt into a bright, uncolored bead, while the rubbed end will have the redish tinge of oxide of iron. All makes of gold seem alike in this respect—all will discolor under faithful manipulation; therefore much of the blame laid upon our foil manufacturers for furnishing us with impure gold is unjust. None of the cohesive foils, which are said to be 1000 fine, have I found to discolor in the flame before using, but some of the non-cohesive, which remain so after annealing, do—showing that some preparation is placed upon or in them which gives them this peculiar quality."

A sufficient refutation to this theory is that though a dentist is constantly using steel instruments, this discoloration seldom appears; in a mouth where it is seen it is generally only in one or two cavities out of many.

Sixty five Students of Dentistry were graduated this year by the Pennsylvania Dental College. It also conferred the honorary degree of D.D.S. upon four of its professors:—James E. Garretson, M.D., S. B. Howell, M.D., S. H. Guilford, and J. Foster Flagg.

LETTERS FROM A MOTHER TO A MOTHER ON THE FORMATION, GROWTH AND CARE OF THE TEETH.

BY MRS. M. W. J.

LETTER VII.—EFFECTS OF DISEASE UPON TOOTH-STRUCTURE.

Having learned how to provide your blood with the chemical elements essential to the various tissues of the body, and especially those necessary for the formation, nutrition, and growth of the teeth, we reach another important point in the care of those organs *before their eruption;* and that is, the effect of various diseases upon tooth-structure.

The rapid heart-beat, and the quick throbbing of the pulse, of the infant, are a certain index to the rapid changes taking place in the growing tissues; any interruption in this growth must leave its impress upon those tissues. Especially is this true of the teeth, which, like the hair and nails, being dermal appendages (or of the nature of skin), are peculiarly liable to be injuriously affected by skin diseases, accompanied with much fever. You know how dry and lusterless the hair becomes during sickness, and how often it dies and falls from the scalp, after protracted fevers. You have also, perhaps, noticed that there are grooves and furrows and white spots on the nails during and after severe illness. The hair and nails are growing rapidly all the time, and therefore these effects are promptly visible, while the teeth, after eruption, being extremely dense and hard, changes in their texture are slow, and less visible to the eye, as they affect the internal and less dense portions, rendering them extremely sensitive and liable to decay.

But before the birth of the child, while the teeth are growing, such forms of disease as scarlet fever, small-pox and measles, in the mother, or suffered by the child itself after birth, but previous to the eruption of the teeth, leave their impress upon those organs as unfailingly as upon the hair and nails in after life.

Another consideration is, that while disease lasts there will be little or no appetite, little food will be taken, and even that small quantity will not be properly digested; no new material being furnished the growing teeth, their development will be checked, and, as the final result, the forming enamel will be marred by grooves, furrows, or white spots, showing after the eruption of the teeth the unfailing and indelible marks of "interrupted nutrition." Guard yourself, therefore, carefully from all exposure to this class of diseases, before your child is born—if you are not exempt from them by a previous attack, and even then a "second attack" is by no means impossible,—and shield your child even more carefully, until after the teeth are all erupted.

The pitted and "honey-combed" appearance of the teeth, resulting from these causes, is not only unsightly in itself, but is a sure precursor of early and rapid decay.

There is another point that is worthy of serious consideration, and that is the possible effects of vaccination upon the teeth. One hundred years ago, when this practice was first introduced, as the greatest possible boon to afflicted humanity, little was known regarding the development of the teeth. The question under consideration was, of course, not then raised; in fact, it is only of late years that it has become a matter of investigation. But from what is known of the effects of vaccination upon the general system, and from the similarity of these effects, in a circumscribed degree, to those of small-pox, measles and scarlet fever, in the accompanying "blood poisoning"—the injurious effects of the latter class of diseases upon the teeth being so positively known, it would seem to be only a proper measure of precaution to postpone vaccination until the teeth are beyond any possible danger.

The liability to small-pox, for a child, surrounded by proper sanitary conditions, and under a mother's watchful care, is a contingency so remote and doubtful, while the danger from vaccination (if any) is direct, immediate and avoidable, that it is, as I said, only a wise measure of precaution to postpone vaccination until the teeth have passed the danger point; and this is—when?

Certainly not until after the enamel of the last permanent tooth is completed, and the wisdom teeth erupted; for the pitting and honeycombing of even the wisdom teeth, though not offending the eye as in the case of the front teeth, nevertheless renders them liable to rapid decay.

And even then, can we say that it is consistent with prudence, or that we have the right voluntarily to expose the teeth (and the whole system as well) to the disastrous effects of interrupted nutrition? For, as long as life lasts, in the teeth, as in all other portions of the body, nutrition is carried on through the circulation—worn out particles being removed and new supplied—and while *disease* lasts, there is little or no nutrition supplied to any portion of the body; and in no portion of the system are the results of disease more disastrous than in the teeth.

There are also other diseases, as diabetes, consumption, scrofula, and certain other inherited taints of blood, which make their unfailing mark upon the teeth; unmistakable to the well-informed dentist, but outside of our field of inquiry.

Rev. Dr. Kirkus, of Baltimore, in a recent essay on "Woman," says: "By far the most important incident of marriage is motherhood, and no doubt many girls are allowed to grow to maturity, and even to become engaged to be married, without any proper warning or instruction as to what motherhood involves. The incredible ignorance of some young wives on such subjects amounts almost to idiocy."

If more, however, was known and understood by young people, and taken into consideration before marriage, much entailed suffering and misery might be avoided, for it is in this sense that "the sins of the fathers are visited upon the children unto the third and fourth generation."

Editorial.

THE SELECTION OF ARTIFICIAL TEETH.

In the selection of artificial teeth, we should imitate nature. We are too apt to look for the prettiest, the most regular, and the most mechanically and artistically correct. There are only a few in whose mouths such teeth would be in harmony with the features. Usually, teeth a little irregular, not too small, not too tight, and placed on the alveolus so as to favor irregularity of features, are better.

We once had a patient of angular, irregular features, who, as he saw a set of teeth we had made for him, exclaimed: "Do you call that a good piece of workmanship? See how the teeth on the right side stand out and those on the left are thrown in. Then, on one side they go back a half inch farther than on the other side. The front teeth are all askew. Instead of the line of the teeth describing a horse-shoe as the jaw does, there is no shape nor comliness in them."

Well, it was about so; and yet, when the teeth were put into the mouth, all was in harmony. It would have been difficult to bring the man to any sort of harmony with mechanical correctness; therefore we had brought the teeth to represent the man.

An old lady once came to us for a set of teeth before going to see her friends in another state. Re-entering our office on her return she said:

"Doctor, don't you remember saying, when I bought my teeth of you, that if, on my return, I did not like them you would take them back?"

"Yes."

"Well, I don't like them. I thought when you made them they were homely; and though I have had no one find any special fault with them, I have not had a compliment for them during the six weeks I have been among my old friends."

"How long," we inquired, "is it since you had previously seen your friends?"

"O, five years."

"And at that time you had your natural teeth?"

"Why, yes; but what has that to do with the case?"

"Why," we replied, "the fact that they did not compliment you on your new teeth was the greatest compliment they could have had; for it shows they are so much like your natural teeth your friends did not notice the change."

"I never thought of that. I am satisfied," said she, and walked out of the office.

Now we must acknowledge we had used for the old lady one of the homeliest sets of teeth in our drawer. And to make them still homelier we had irregularly ground down the edge of the front teeth, both of the upper and lower, till they actually looked like old teeth she had been wearing down for sixty years! "They are spoiled," would have been the exclamation of most patients—and perhaps also of many dentists.

VULCANIZING RUBBER IN SOAP-STONE.

Dr. Brunton, of Leeds, England, says that for some years he has invested rubber work for vulcanizing in powdered soap-stone instead of Plaster of Paris. He thinks rubber is injured by contact with the latter during vulcanizing. Even the plaster model is therefore coated with liquid silax. Of the process he says in the *British Journal of Dental Science*:—

"The models being dry are coated with a thin solution of rubber in chloroform, and a piece of sheet rubber of the desired size and shape is warmed and pressed close to the model, excluding all air. Any extra thickness may be built up by adding small pieces of warm rubber. The teeth to be mounted are now put on a small metal tray and heated over a spirit lamp, and one by one placed in position on the model. When all the teeth are mounted, trim off the extra rubber with a hot knife, cover the rubber with tin foil, taking care not to disturb the position of the teeth. The work is now ready for hardening, and is placed in a tin box which is large enough to allow about ¾ in. room all round for the investment; this consists of soap-stone in powder. The dry powder is pressed lightly in till the box is quite full, the lid is closed and fastened down with a thin piece of wire."

The vulcanizing is done as usual, and when removed the soap-stone is preserved for the next investment.

Another dental college seems to be in contemplation. Two prominent Chicago dentists were in Philadelphia in January to investigate those that are, as a step toward bringing into being one that is not. If the purpose is to give us a college decidedly in advance of those now in operation, it will be welcomed. Not that present colleges are not doing a great good. They are decidedly better than would have been possible twenty years ago. But we believe the near future will give us something still in advance of what we have. Are we to look to Chicago for it? If so, "the little unpleasantness" in the kitchen department feature of one of their colleges, which was to turn out such fat cubs for the profession, will be a general good.

IF LADIES COULD TALK.

If ladies could talk would they not object to those dark, dirty stairs leading to your office? Even the light which might come through the small window is hindered by the cobwebs and dust on it. My! when was that glass cleaned? And when was the broom last used on the stairs? If recently, the work must have been shiftlessly done.

If ladies could talk would they not tell you of the money you could make by having a nice office? That furniture—well, of course, if it is the best you can afford, it should not be changed for better, but it might be kept well dusted and varnished. Are you quite sure that carpet could not be bettered without sinking you hopelessly in debt? A nice, bright, clean carpet and a few good pictures, with a neat set of furniture, improves an office wonderfully. Patients would be sure to tell of it. Though they may be afraid even to hint to you that they notice the change, they will let their neighbors know it. And it does tell on those neighbors—then on your practice—then on your pocket.

If ladies could talk would they not ask what that horrible smell is, so often encountered in a dental office? There is no need of it. Keep the spittoon clean, the tincture bottles well stopped, and the room well ventilated, then the atmosphere will be as pure as that of a parlor. And this, too, will tell. Ladies will whisper on the sly, though they are too diffident to talk. They are repelled by offensive odors, whether on you or in your office, and it is for your interest to be rid of them.

If ladies could talk they would soon tell you how much better you look with that nice, clean office gown, than with the greasy, threadbare, coarse coat you wore before you read these hints. Ah! and it is well you looked in the mirror after putting it on. That is the reason your hair has been cut and combed, and perfumed, and—well! if you haven't actually new office clothes throughout! That gown did it. All right; your patients will pay for them all—even to your neat-looking slippers. I know from experience. A lady dared to whisper all this to me once, and I went and did it, and Mr. Public Opinion soon recompensed me abundantly. It made me feel better, too, and increased my efforts to do good work.

If ladies could talk—you don't observe how askant they sometimes look to see if your instruments are clean, if your napkins are freshly laundried, and if everything you do and say is gentlemanly and proper? Ah, if these ladies can't talk, they can keep up a terrible thinking, and it pays to have them think well of you.

In emergencies keep cool and depend on good common sense. Frustration is often the result of an attempt to display some special sense in some special manner.

PRELIMINARY EDUCATION FOR DENTAL STUDENTS.

It is a pity we have not some effectual barrier against young men becoming students of dentistry before they have learned, at least, the primary elements of a common school education. It is deplorable to see how illiterate many are who "graduate with honors" from our dental colleges. No preliminary qualifications are required, and no amount of ignorance debars applicants from a graduating course. If these schools gave some instruction in general education there would be some sort of excuse for taking such "raw recruits," but they do not. Young men are sent out as "professors" in "a dignified profession," to occupy a position in the community "above the common walks of men," almost as ignorant in all the branches of a general education, as when they came to the "college."

There would be some barrier against this evil if dentists were more considerate in taking students. But even here there is not sufficient care to ascertain the educational acquirements and natural adaptation of applicants, and courage to reject them when unfit. And if some dentists do require these preliminary tests, or see that a sufficient time is given to general culture by their students, the doors of our colleges are open to those who have never seen a dental office. Then, too, not a few dentists play what seems to us a dishonorable part by encouraging mere boys to come into their offices, as students of dentistry, to be made simple menials; and even those of larger growth are often employed as mere chore boys, and kept from legitimate professional work under the plea that it will not do to advance them too rapidly; and when "their time is up" they are sent out to disgrace the profession. No wonder we have so much illiteracy and incompetency in the profession.

A Cause of Degeneracy in Teeth.—One of our greatest medical philosophers (Prof. Jackson, of Philadelphia), deplores the marked tendency of the physical organization of woman on this continent to degenerate. Is it not reasonable to suppose that this weakening of the physical forces of the mothers of this country (thereby reducing the organic forces), has more to do with the congenital anomalies so often seen in the teeth, than the lack of sufficient quantity of lime element in blood? Are not the fissures, pigment spots, and other abortive conditions we see in these dentures, caused by a lack of nervous energy to properly sustain the organic forces in their effort to make a perfect denture? My own observation has been that these poorly formed teeth contain more lime and less organic matter than those which are well formed. Therefore, I am led to believe that the cause of these defective teeth is a weakening or letting down of the vital forces, thereby preventing the proper assimilation and organization of the inorganic substances.

C. FONES, D.D.S.

WE ARE ALL INSTRUMENTS.

Some of us are pretty dull ones, some rather awkwardly made, and some—well, it is hard to say what we are good for. Some are really too sharp; you can't touch them without getting cut; while others are like saws—necessary to use, perhaps, but, O how they tear and lacerate the flesh. But anything rather than that class the colored preacher tells us of: "And they shall gnaw a file." Some would be harmless instruments, if it were not for the use we have to make of them. Dentists, for instance, are a pretty good sort of fellows,—they wouldn't hurt you for the world—but my! get in their way—or, rather, in their chair! You are put into a vice; and they are turned into rasps, and hammers, and augers, and hoes, and chisels, and saws, and needles, and finally into cant hooks and root priers, and great iron pincers, and all manner of indescribable and unbearable instruments of torture. They go through your jaws to the very marrow, like a sub-soil plow drawn by six yoke of oxen! or like a locomotive dashing along to very destruction! or like thunder and lightning flashing and crashing hither and yon, splitting your very brain!

Of bacteria, C. S. Boynton, M.D., says: "To study their history is, in truth, nothing less than to be brought face to face with the claims of spontaneous generation"—"and without wishing to attribute to these organizations a finality which is repugnant to our monistic conception of the universe, it may be said that it is thanks to them that the continuance of life is possible on the face of the globe." With what minute knowledge of their history and character he must be possessed! And yet hear him again: "At one time considered as animals, at another taken for vegetables; transported from the algæ to the fungi; and one author has even gone so far as to refuse to them the nature of living beings. When we take into account the minuteness of their dimensions and the difficulties with which their observation is surrounded, this diversity of opinion is not at all surprising." It will not do to be too dogmatic even with little things. Better admit with M. Cohn—whom Boynton himself admits "in our day has occupied himself the most with the bacteria"—that, "so long as the makers of microscopes do not place at our disposal much higher powers, we will find ourselves, in the domain of bacteria, in the situation of a traveler who wanders in an unknown country at the hour of twilight, at the moment when the light of day no longer suffices to enable him clearly to distinguish objects, and when he is conscious that, notwithstanding all his precautions, he is liable to lose his way." Even Boynton admits that "all will acknowledge the truth of this observation of Cohn."

SAVE THE TEETH.

It is true, many who come to us are not worthy of our best efforts. They care nothing for us as dentists. It is as "tooth pullers" they seek us. With some, if fifty cents more than the cost of extracting would save a tooth, they would think to retain it was too expensive. They prefer to "git shed of it." In many cases, an attempt to save a tooth, even for comparatively intelligent persons, is "love's labor lost;" or if much determination makes us successful, it is not appreciated, especially if we make a proper charge for our work. And yet we must persevere. We must refuse to extract when we believe a tooth can be saved. At the same time we must educate the people to attend to their teeth more promptly and intelligently. Often, while we are doing this, and earning pennies, we might be attending to more appreciative patients and earn dollars. But this should not excuse us from doing right with the ignorant, and being firm with the penurious and indifferent. As professional men we must be teachers; as conservators of the public good, we must be willing to be servants. Yet as teachers we will be as careful to correct popular errors, as to promulgate pleasant truths, and as servants we shall refuse doing wrong, even for the most autocratic. A firm, patient, persevering course will attract the more intelligent and liberal, who will prove our most profitable supporters.

Sand Power.—We have water power and wind power and steam power; why not have sand power?—or, rather, the combination of the power of wind and sand. A wind mill of itself is too unsteady and uncertain for most mechanical requirements; such, for instance, as the turning of the dental lathe and engine. And yet wind is the cheapest power known. If water is handy, it may be pumped to a sufficient height and stored and then converted into a steady power by passing over an overshot wheel as wanted. But it is sometimes difficult to store it at a sufficient height for use. Then use dry sand. It is easily had and easily stored where it is wanted, and being heavier than water less in bulk is required. There is also less danger of leakage. It may be carried up to a bin in a cupped endless band, by the wind mill. When wanted as power the cups are carried up empty and brought down full over the overshot wheel, the turning of which is geared to the machinery of the office.

To drill glass artificial teeth, &c.—Perhaps the best way is with a steel drill, hardened thoroughly, and not drawn at all; wet with spirits turpentine saturated with gum camphor. Bear on lightly and run rather rapidly.

GO FOR YOURSELF, YOUNG MAN.

It is all well enough to learn under a tutor, but when you have learned, put out! Not rashly, prematurely, presumptuously. Be sure you are ready, and then go ahead. Study well in matter and manner the order of your going. Now take the leap! Know as far as you may the position you are to assume—its nature, circumstances and surroundings. But let not fear, timidity, and surmountable obstacles keep you too long on the order of your going. Up! March! and be yourself, for yourself, by yourself. Unnecessary delay may cheat you out of the advantages of a grand position, or produce in you those weaknesses which will disqualify you from occupying it. Self distrust is the cause of more failures than temerity. The assurance of strength brings strength. They are the weakest, however strong, who have no conscious strength; and conscious strength is seldom revealed to us in its mighty grandeur till we assume the responsibilities which come from independence. Have faith in yourself; have a high opinion of your future; and be assured that you are the arbiter of your own destiny.

Wake up, then, young man, and feel of yourself. Try the metal you are made of, and show us what you can do. Strengthen your weak points, correct your bad habits, and overcome your follies; bring to the front your best powers, trim yourselves for a noble work, and stand forth a man! Cut your apron strings and put on dignity, bid good-bye to vassalage, and own yourself. Make for yourself and a good wife *a home*, and play second fiddle to no one.

"*Chewing tobacco*," Dr. George J. Fredericks says, "is a preservative of the teeth. It stimulates the flow of saliva, keeps the fluids of the mouth in constant motion by the movement of the tongue, lips, and cheeks, thereby constantly cleansing the masticatory organs."

He does not tell us if he recommends it to his wife and children. And yet if it is to be commended, why should it not be good for them? If it preserves his teeth, will it not theirs? But we presume even Dr. Fredericks would say it would be a dirty habit in them. Then is it not too dirty a habit for him? Is it not degrading for me to do what I cannot think respectable for my wife and children to do? If his wife were to commence chewing tobacco on the pretence that it would keep her teeth clean, how quickly her husband would remind her there were more cleanly means, and if she persisted in following his example, he would lose all respect for her. Many of us seem to think there should be two standards of morals and respectability; one for our wives or sweethearts, and another for ourselves.

We have physicians who make drunkards by recommending intoxicating "tonics;" shall we have dentists who encourage the use of tobacco by recommending it to clean the teeth with?

Be kind to your patients. It does not cost much, but it pays well. Gruff manners may grow out of thoughtlessness, yet they will militate against a dentist's influence. The best surety for the successful exhibition of habitual kindness is to have a spontaneous overflow of the disposition. We can exhibit only what we have; it is difficult to make appear what we have not. That dentist who has not a heart surcharged with kindness had better change his vocation.

It is specially necessary in treating with children. If we succeed by deception, it is but for once; if by force, we become an enemy; but if by kindness, we have not only won a battle, but gained a subject—yes, a life-long friend and advocate. Then we may give pain, but it is forgiven; it may be almost unbearable, but up through the tears will come love in response to sympathy, and their union will make inseparable friendship.

Floss silk is one of our best adjuncts to the cleaning of the teeth. It is easily inserted, and by drawing a short string of it to and fro upon the approximal surfaces of each tooth, they will be made very clean. This, and a nice gold tooth-pick, should be in the hands of every person who would be particular to save their teeth. Spools of floss silk are now sold very cheap.

Brushing the teeth may be carried to excess.—We have known many instances where severe abrasion had furrowed the face of the teeth near the gum into deep ridges. Cleaning the teeth should not be a severe operation. The accumulations upon the teeth are very soft and easily removed. The surfaces of the teeth are not where fermentation and decay are generally found. The tooth-pick and floss silk are quite as essential.

Gas generating in a tooth with decayed pulp will sometimes act with such force as to burst the tooth. Loud reports may sometimes be heard from this cause.

The red tint upon some teeth is generally caused by the extravasation produced by severe inflammation of the pulp. The pressure which produces the pain, at the same time forces the blood through the minute tubes of the tooth substance.

The Central Dental Association of Northern New Jersey is a live organization. At its last annual meeting, February eighteenth, it chose a corps of officers worthy of any State society. We see four of their number, C. S. W. Baldwin, F. C. Barlow, C. A. Meeker, and C. A. Timme, have received the degree of D.D.S. from the Baltimore College of Dental Surgery.

With spongy, loose gums, loose teeth, and tartar well up on the roots of the teeth, cleanse thoroughly from tartar, and apply daily the compound tincture of iodoform and eucalyptus; the former alone will do.

The man who would be useful, great, and happy must remember three things

1st. That the chief treasures of his head and heart must be those of his own production. But

2d. That to produce largely, he must gather diligently from without that which, by much labor within, can be vitalized for his own use. And

3d. That to keep these treasures and increase them, and especially to make the most of them, they must be given away.

In knowledge there can be nothing selfish. Wisdom cannot be profitably packed away. Our best things must be used for the good of others, or they become comparatively useless.

There are too many morbid thinkers, who revel in theories and intangible, impractical, useless projects, but who, in any practical enterprise, or sound, healthy work, are clumsy, crude, and unreliable; and there are too many miserable workers who lack system, precision and thoroughness. Thought can only be made healthy and useful by labor, and labor can only be made skilful and remunerative by thought.

Know for Yourself.—Too many of us pursue a course of treatment or manipulation because others do so, or "the authorities" advise it, or some great man thinks it would be just the thing. We are continually trying to use the brains of others to the neglect of our own. It is well to be teachable—commendable to look to all sources for help, but these must only be aids. We must, after all, depend mostly on what we know by intelligent and persistent experiment and practice.

Be Just and Disparage Not.—It is so difficult not to make our Is larger than our Us. When *we* do a smart thing we can hardly find words sufficient for laudation; but when our neighbor does something people generally think quite as smart, we "cannot see it," and wonder what they are making such a fuss about. This is especially so if that neighbor is our competitor.

Perhaps one of the best tests of magnanimity is our ability to be just to a rival, while blindness and selfishness is as clearly displayed by his disparagement. We are often more ready to give the devil his due than a rival.

This ought not so to be. We condemn it in others; why not in ourselves?

And our interests will not so seriously suffer by being just, and even magnanimous to our severest competitors; neither are they promoted by our bigotry and selfishness. We cannot disparage the merits of others without disparaging our own.

French Polish.—Pale shellac, five pounds; mastic, seven ounces; alcohol, five and a half pints. Dissolve in a cold temperature with frequent stirring.

Miscellaneous.

ITEMS IN CHEMISTRY.

BY PROFESSOR H. E. ROSCOE.

MEANING OF A CHEMICAL EQUATION.

All the chemical changes can be written in symbols. Every one of these changes are definite, and in each we can know not only what has taken place, but also how much of each substance has been formed. Let us take one or two examples. If I want to prepare nitric acid, I take nitre (potassium nitrate) and sulphuric acid, then nitric acid distils over, leaving potassium sulphate in the retort. Now what happens in this change; and how much sulphuric acid and how much nitre am I to take, so as not to waste either? In order to find this I must write down the formula for nitre, and for sulphuric acid. Nitre is written KNO_3; that is, it contains three elements—potassium, K=39; nitrogen, N=14; oxygen, O_3=3 times 16, or 48. Sulphuric acid is written H_2SO_4; that is, it contains hydrogen H_2=twice 1, or 2; sulphur, S=32; oxygen, O_4=4 times 16, or 65. When we mix these two compounds together, a change occurs; half the hydrogen (H) in the sulphuric acid changes place with the whole of the potassium (K) in the nitre, and two new substances are formed, viz., HNO_3, nitric acid (which distils off as a yellow liquid), and $KHSO_4$, sulphate of potassium, which remains in the retort as a white solid salt. This change we can therefore express in an equation, thus—

Before the change.		*After the change.*
Nitre and Sulphuric Acid	yield	Nitric Acid and Potassium Sulphate.
$KNO_3 + H_2SO_4$	=	$HNO_3 + KHSO_4$

This shows us, then, exactly what takes place; nothing is lost; the nitric acid and potassium sulphate which we get, weigh, taken together, as much as the nitre and the sulphuric acid which we took. We see this clearly if we write down the numbers which these symbols represent.

39 + 14 + 48 and 2 + 32 + 64	=	1 + 14 + 48 and 39 + 1 + 32 + 64				
101	+	98	=	63	+	136

The equation then tells us that if I take 101 parts by weight of nitre and 98 parts by weight of sulphuric acid, I shall get exactly 63 parts by weight of nitric acid, and that no nitre or sulphuric acid will be wasted; and you will easily understand that these numbers enable you

to calculate the quantity of the materials you must take, to get any given weight of the acid. Suppose you wanted 10 pounds of nitric acid, how much sulphuric acid and nitre would you need to employ? Well, if you wanted to get 63 pounds of nitric acid, you would need 98 pounds of sulphuric acid, and 101 pounds of nitre; and, of course, in order to get 10 pounds you will need 10·63 of 101 pounds of nitre. So that all calculations of this kind are matters of simple proportion.

Let us take one other example. We made hydrogen by acting upon zinc with sulphuric acid and water. The change which here takes place is represented by the equation—

$Zn + H_2SO_4$	=	$H_2 + ZnSO_4$	or
Zinc and Sulphuric Acid	yield	Hydrogen and Zinc Sulphate.	
65 and 2 + 32 + 64	yield	2 and 65 + 32 + 64	or
65 and 98	yield	2 and 161	
parts of Zinc.	parts of Sulphuric Acid.	parts of Hydrogen.	parts of Zinc Sulphate.

This means that if I take 65 pounds of zinc, and 98 pounds of sulphuric acid, I must always get 2 pounds of hydrogen gas, and 161 pounds of zinc sulphate.

In like manner every chemical change, as soon as we understand it, can be represented by a formula, or set of symbols, which tells us exactly what happens, and how much of each of the various materials must be taken, and how much of each of the several products are formed.

It is the business of the chemist to seek out and determine the nature of all new chemicals which may be observed, and he does this with zeal and confidence, because he knows that if he has once determined, with care, the nature of the change, and if he has once ascertained the proportions by weight in which the elements, or compounds take part in it, he has settled this particular question forever, as the same chemical combination always takes place according to the same unchanging laws.

"*Letters from a Mother to a Mother* on the Formation, Growth and Care of the Teeth;" by the Wife of a Dentist: Mrs. M. W. J.—These letters were first written for the *Southern Dental Journal*, but became so popular that the demand for their publication in pamphlet form could not be resisted. Being written from a new standpoint—that of a mother, and evidently a very intelligent one at that—it presents features not before brought so prominently, uniquely, and profitably before the masses of the people; and especially before mothers.

We advise dentists generally to have them in their offices on sale; and often they could be given away with material profit to their own practice.—JUDSON & DUNLAP, Atlanta, Ga.; $1.50 per doz.

HOW LEAD PENCILS ARE MADE.

For the benefit of those of our readers who are not familiar with the subject of pencils and their manufacture, we may state that the ordinary pencil is filled with a preparation of graphite, commonly called black lead or plumbago, both of which are misnomers, as there is no lead or plumbum in it. Until quite lately it has been considered by chemists as a carburet of iron, but it is now generally acknowledged that, although it shows traces of iron, this metal is only mechanically mixed with it—there being no chemical combination between the two.

Pencils were originally filled with square sticks cut from blocks of graphite found in the famous Borrowdale mine, in Cumberland, England, which contained the purest ever found, but on the exhaustion of that mine the impure materials to be found elsewhere were pressed into service, after proper purification. The process adopted by the Dixon Company at Jersey City, who use a graphite found at Ticonderoga, N. Y., is as follows: The graphite is first ground fine in water, treated with sulphuric and nitric acids, and, after washing clean, heated to a bright red. Then it is mixed with sufficient water to make it run freely, and allowed to pass slowly through a series of tanks arranged in steps, until the water leaves the last one of the series almost clear, having left the graphite deposited and graded in the tanks—the deposit in that nearest the overflow, being the purest, and finest grain, is used for the best pencils. The graphite after being taken from the tanks is dried, and then mixed with pipe-clay obtained from Rotterdam, Holland, which has been purified in the same way as the graphite, only the very finest being used for pencils, as the coarse can be utilized in the manufacture of crucibles. Upon the amount of clay used depends the hardness of the pencil—the more clay the harder the grade—about seven parts of clay to ten parts of graphite, by weight, forming a medium. The clay and graphite is thoroughly mixed with water and ground like paint, but is passed repeatedly through the mills, as many as twenty-four times being considered necessary for the finest grades. When ground sufficiently the pasty mass is inclosed in a canvas bag, and the water is squeezed out by a powerful press, leaving the compound in the form of a stiff dough, which is placed into a cylinder of a forming machine, and by no means of a piston, driven down by a powerful screw, is forced out at the bottom of the cylinder in the form of "leads" that, after being heated in a crucible to a red heat, are ready for insertion in the wooden blocks to be cut into pencils.

The blocks are formed by sawing the wood into pieces as long as a pencil, six times as wide, and half the thickness, which are afterwards run through a planing machine that not only smooths them but cuts in each block six grooves half the thickness of the "leads." In the

grooves in one block the "leads" are laid, a second block, previously coated with glue, is laid on the first, and a pile of these compound blocks are placed in a press, where they remain until dry. The blocks are next cut apart into six pencils each, by passing through a machine like a moulding machine, having two sets of cutters operating on opposite sides of the blocks, each of which cuts half way through the wood. The cutters in these machines are so accurately arranged, and run so true, that when the pencils leave the machine there is no mark to show the line of separation from the block other than the joint of the two pieces of the wood inclosing the lead, and are said to be so smooth that sand-papering would roughen them. The shaping machine turns out about 72 per minute, or over 43,000 per day. The pencils are then varnished or colored by another machine, at the rate of 120 per minute, or 72,000 per day; and then polished in another machine at the rate of 106 per minute, or over 63,000 per day; all by unskilled labor.—*Scientific American.*

MILK AS A VEHICLE OF INFECTION.

Much has been written of late on this subject, and not without reason and profit. Dr. Ballard, in 1880, proved that scarlet and other fevers and epidemic diseases were conveyed by the germs accumulated in milk. It is now generally admitted that milk is peculiarly fitted to be the vehicle for the propagation of disease. Those who have given the matter attention know how quickly milk takes from the atmosphere of a room any taint with which it may be infected. A man smoking where it is exposed will impart to it the smell of tobacco. Onions cooked in the room will give it the smell of onions, etc. So also milk exposed in a sick room will soon have the smell peculiar to the room. The taste of milk is affected in the same way. However clean a milkmaid may be in milking, most housewives will tell very quickly whether the cow is stabled or kept in the pasture, especially if the stable is not kept scrupulously clean. And all know how easily the taste of milk is affected by the food of the cow.

Much care, therefore, should be taken to see that milk is kept in rooms as clean and healthy as possible. And even then, if we would have milk freed from all infectious germs as much as possible, it should be boiled before using.

The ordinary rubber cement which is so much used by fine shoemakers is made by dissolving a quantity of gutta-percha in chloroform or carbon disulphide until the solution has the consistency of honey. Thin down the parts to be cemented, then spread a small quantity of the cement well over the parts to be joined. Warm the parts over a flame or fire for half a minute, bring the surface to be united together, and hammer well or clamp firmly. The cement dries in a few minutes.

HEALTH MAXIMS.

DON'T.

Don't sleep in a draught.

Don't go to bed with cold feet.

Don't stand over a hot air register.

Don't try to cool too quickly after exercise.

Don't eat merely to save food or to get your money's worth.

Don't sleep with insecure false teeth in your mouth.

Don't sleep in a room without proper ventilation.

Don't stuff a cold lest you be obliged to starve a fever.

Don't use your voice much when very hoarse.

Don't try to get along without flannel underclothing in winter.

Don't sleep in the same underclothing you wear during the day.

Don't try to keep up on tea, coffee, or alcohol when you ought to go to bed.

Don't drink ice-water rapidly; take it in sips, and quite slowly.

Don't bring on baldness and headaches by wearing close, warm head coverings.

Don't ruin your eyes by reading or working by a dim or flickering light.

Don't experiment with drugs because you fancy yourself ill.

Don't run for the doctor when sick when yon can cure yourself by using common sense.

Don't imagine stimulants will help you bear heat or cold.

Don't eat pork or veal when yon can get beef or mutton.

Don't hope to cure dyspepsia by using pastry or rich food.

Don't neglect to keep the feet warm, the head cool.

To Obtain Light Without The Use Of Matches.—To obtain light instantly without the use of matches and without the danger of setting things on fire, take an oblong phial of the whitest and clearest glass; put into it a piece of phosphorous about the size of a pea, upon which pour some olive oil, heated to the boiling point, filling the phial about one-third full, and then seal the phial hermetically. To use it, remove the cork and allow the air to enter the phial, and then recork it. The whole empty space in the bottle will then become luminous, and the light obtained will be equal to that of a lamp. As soon as the light grows weak its power can be increased by opening the phial and allowing a fresh supply of air to enter. In winter it is sometimes necessary to heat the phial between the hands to increase the fluidity of the oil. Thus prepared, the phial may be used for six months. This contrivance is now used by the watchmen of Paris in all magazines where explosive or inflammable materials are stored.—*Druggist's Circular.*

CURIOUS PROPERTY OF ICE.

Under certain circumstances ice does not behave as a solid, but as a viscous fluid, like very thick treacle. Glaciers do not move down in one block, but flow, accommodating themselves to the varying width of their channel. Professor Tyndall planted a row of sticks in a straight line across a glacier, and after a few days the line had become a crescent, with a concavity upward, showing that the middle of the glacier moved faster than the sides, just as in a river the stream is stronger in the center. Two theories have been put forward to account for the viscosity of ice: one is that it is a true viscosity, and the other is that it is produced by the effect of pressure in lowering the freezing point of water, so that when the ice is subjected to a great pressure it melts. The water then yields to the pressure, and instantly re-freezes in its new shape. A striking experiment—due, I believe, to Mr. Bottomley—illustrates this. A block of ice being laid across the backs of two chairs, a fine iron wire is put over it, to which is hung a heavy weight. In a short time the wire passes completely through the ice, and allows the weight to fall, while the ice is not broken, nor is any mark visible where the wire has passed. The explanation is that the pressure of the wire melts the ice below it. The water is displaced by the wire, and fills the space above it, where, the pressure being removed, it instantly re-freezes. The viscosity of ice can be shown by cutting a long, thin slab of ice and supporting it on two chairs, when it will, even in a temperature below freezing, gradually bend with its own weight.—*Nature.*

It is well known that the venerable father of the House of Representatives, the Hon. William D. Kelley, of Pennsylvania, was much troubled last year by a cancerous tumor in the mouth. He attributes it entirely to the use of tobacco, and although he had chewed and smoked for fifty-five years, and his first efforts to break off the habit brought on nervous prostration, he kept on until he thoroughly conquered, and is now entirely free from the pernicious habit. Let the young men who are just taking it up save themselves much distress and trouble and waste of money by breaking it off *now*. "Cease to do evil, learn to do well."—*Advocate.*

Care in avoiding pain is an evidence of progress in our profession. The time has been when it was foolishly thought that to be stoical showed evidence of experience and skill, and sympathetic, of inexperience and weakness. Now, indifferenee to the pain inflicted is sure to deprive the dentist of his best patrons and to exclude him from that advanced position in the profession to which we all aim by a common ambition.

EDITORIAL NOTICES.

The Illinois Dental Society meets May 13, at Springfield.

The Mad River Valley Dental Society will hold its next annual meeting at Dayton, May 20th, 1884.

Dr W. S. Elliott has moved from Goshen, N- Y., to 158 Keep Street, E. D. We believe this will be a benefit to himself and to the profession.

The Minnesota State Dental Society will meet July 16 next, in St. Paul. Some of the leading dentists of the State are making vigorous efforts to make it a grand success.

Vulcanite and Celluloid: Instruction in their practical working for dental purposes, by S. E. Gilbert, D.D.S., is a concisely written book of 116 pages. It is a work of practical interest to every dentist.

The Dental Department of the State University of Iowa is in the process of healthy development. Prof. Hunt sends us the number of matriculants as 31 ; graduates, 13. They are making a specialty of bridge and crown work.

The Fifth District Dental Society of New York has quite an exhaustive programme for their next annual meeting, April 8th and 9th. Unless the State Societies keep wide awake, some of those less pretentious District Societies will far outstrip them in growth and efficiency.

The Fourth Annual Meeting of The Texas Dental Association will be held at San Antonio, beginning Tuesday, April 29th, and continuing three days, the change in date having been made to accommodate members wishing to attend the meeting of the Southern Dental Association.

GEORGE M. PATTEN,
Corresponding Sec'y.

The memorial meeting with reference to the death of Prof. Thomas L. Buckingham, is issued in pamphlet form. The Dental Societies of Philadelphia have in this matter done themselves credit. At the same time they have shown to the deceased honorable and justly merited regards for noble and persevering services.—Patterson & White, 607 Chestnut St. Price, 25 cents, to cover cost of publication.

A Good Quality of Baking Powder.—Powdered cream tartar, 30 ounces; sodium bicarbonate, 15 ounces; flour, 5 ounces. All well dried; mix thoroughly, and keep dry.

"*Low's New Method*" of artificial teeth without a plate, is a neat little book of one hundred and eighty pages. It is a system of bridge work, a method of inserting artificial teeth that is taking such a prominent place in prosthetic dentistry. The treatise is a popular one, intended principally for the non-professional, and therefore contains general remarks upon the growth, care, and treatment of the natural teeth, etc.—DR. J. E. LOW, Chicago, Ill.

The temperance people of Iowa do not intend to relax their efforts for prohibition because of the failure of the Constitutional Amendment by reason of some technical errors in the methods of its passage. One of the latest testimonies on this subject, and one of much importance on account of the high position of the witness, is from Senator James F. Wilson, who says: "The Legislature will pass prohibitory laws, and insure total prohibition. I am in favor of this course. Positive prohibition can be enforced, and will be enforced."

Funny, if not just.—The Editor of the *Jairus* sneers at the idea of a *woman* teaching through a dental journal. He says: "We fail to see the appropriateness of her articles in a dental journal." Well, it is a pity the editor of the *Southern Dental Journal* is not more particular iu his selection of MSS. But I fear he, and editors of other dental journals, would return to authors much "copy" now published before coming to articles of the value that this woman writes, if "the survival of the fittest" was the rule.

The twenty-second annual meeting of the Iowa State Dental Society will be held in Council Bluffs on the first Tuesday of May. Following are the officers:

President—E. E. Hughs, Des Moines.

Vice President—P. M. Shriver, Glenwood.

Secretary—J. B. Monfort, Fairfield.

Treasurer—J. S. Kulp, Muscatine.

Executive Committee—W. P. Dickinson, G. W. Fuller, H. A. Woodbury.

Membership Committee—S. A Garber, L. E. Rogers, A. R. Begun.

Every effort is being made for a good and profitable meeting. Those attending will be returned at one-third fare over the railroads.

J. B. MONFORT,
Secretary.